

SEQUENCE LISTING

<110> AVIDIS SA

<120> MULTIMERIC COMPLEXES OF ANTIGENS AND ADJUVANTS

<130> AHB/FP6164701

<140>

<141>

<150> EP 02292042.5

<151> 2002-08-14

<160> 20

<170> PatentIn Ver. 2.1

<210> 1

<211> 57

<212> PRT

<213> Homo sapiens

<400> 1

Glu	Thr	Pro	Glu	Gly	Cys	Glu	Gln	Val	Leu	Thr	Gly	Lys	Arg	Leu	Met
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Gln	Cys	Leu	Pro	Asn	Pro	Glu	Asp	Val	Lys	Met	Ala	Leu	Glu	Val	Tyr
			20					25					30		

Lys	Leu	Ser	Leu	Glu	Ile	Glu	Gln	Leu	Glu	Leu	Gln	Arg	Asp	Ser	Ala
		35					40					45			

Arg	Gln	Ser	Thr	Leu	Asp	Lys	Glu	Leu
		50				55		

<210> 2

<211> 57

<212> PRT

<213> Oryctolagus cuniculus

<400> 2

Glu	Val	Pro	Glu	Gly	Cys	Glu	Gln	Val	Gln	Ala	Gly	Arg	Arg	Leu	Met
1				5					10					15	

Gln	Cys	Leu	Ala	Asp	Pro	Tyr	Glu	Val	Lys	Met	Ala	Leu	Glu	Val	Tyr
			20					25					30		

Lys	Leu	Ser	Leu	Glu	Ile	Glu	Leu	Leu	Glu	Leu	Gln	Arg	Asp	Lys	Ala
		35					40					45			

Arg	Lys	Ser	Ser	Val	Leu	Arg	Gln	Leu
		50				55		

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<210> 3
 <211> 55
 <212> PRT
 <213> Rattus sp.

<400> 3
 Glu Val Pro Lys Asp Cys Glu His Val Phe Ala Gly Lys Lys Leu Met
 1 5 10 15
 Gln Cys Leu Pro Asn Ser Asn Asp Val Lys Met Ala Leu Glu Val Tyr
 20 25 30
 Lys Leu Thr Leu Glu Ile Lys Gln Leu Gln Leu Gln Ile Asp Lys Ala
 35 40 45
 Lys His Val Asp Arg Glu Leu
 50 55

<210> 4
 <211> 54
 <212> PRT
 <213> Mus sp.

<400> 4
 Glu Ala Ser Glu Asp Leu Lys Pro Ala Leu Thr Gly Asn Lys Thr Met
 1 5 10 15
 Gln Tyr Val Pro Asn Ser His Asp Val Lys Met Ala Leu Glu Ile Tyr
 20 25 30
 Lys Leu Thr Leu Glu Val Glu Leu Leu Gln Leu Gln Ile Gln Lys Glu
 35 40 45
 Lys His Thr Glu Ala His
 50

<210> 5
 <211> 67
 <212> PRT
 <213> Bos sp.

<400> 5
 Glu Tyr Pro Glu Gly Cys Glu Gln Val Val Thr Gly Arg Lys Leu Leu
 1 5 10 15
 Gln Cys Leu Ser Arg Pro Glu Glu Val Lys Leu Ala Leu Glu Val Tyr
 20 25 30
 Lys Leu Ser Leu Glu Ile Glu Ile Leu Gln Thr Asn Lys Leu Lys Lys
 35 40 45
 Glu Ala Phe Leu Leu Arg Glu Arg Glu Lys Asn Val Thr Cys Asp Phe
 50 55 60
 Asn Pro Glu
 65

<210> 6
<211> 57
<212> PRT
<213> Sus scrofa

<400> 6
Glu Tyr Pro Glu Asp Cys Glu Gln Val His Glu Gly Lys Lys Leu Met
1 5 10 15
Glu Cys Leu Pro Thr Leu Glu Glu Ile Lys Leu Ala Leu Ala Leu Tyr
20 25 30
Lys Leu Ser Leu Glu Thr Asn Leu Leu Glu Leu Gln Ile Asp Lys Glu
35 40 45
Lys Lys Ala Lys Ala Lys Tyr Ser Thr
50 55

<210> 7
<211> 56
<212> PRT
<213> Cavia porcellus

<400> 7
Glu Val Pro Glu Glu Cys Lys Gln Val Ala Ala Gly Arg Lys Leu Leu
1 5 10 15
Glu Cys Leu Pro Asn Pro Ser Asp Val Lys Met Ala Leu Glu Val Tyr
20 25 30
Lys Leu Ser Leu Glu Ile Glu Gln Leu Glu Lys Glu Lys Tyr Val Lys
35 40 45
Ile Gln Glu Lys Phe Ser Lys Glu
50 55

<210> 8
<211> 59
<212> PRT
<213> Mus sp.

<400> 8
Glu Val Leu Glu Asp Cys Arg Ile Val Ser Arg Gly Ala Gln Leu Leu
1 5 10 15
His Cys Leu Ser Ser Pro Glu Asp Val His Arg Ala Leu Lys Val Tyr
20 25 30
Lys Leu Phe Leu Glu Ile Glu Arg Leu Glu His Gln Lys Glu Lys Trp
35 40 45
Ile Gln Leu His Arg Lys Pro Gln Ser Met Lys
50 55

<210> 9
<211> 52
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Variant of the
C4bp core protein

<400> 9
Cys Glu Gln Val Leu Thr Gly Lys Arg Leu Met Gln Cys Leu Pro Asn
1 5 10 15
Pro Glu Asp Val Lys Met Ala Leu Glu Val Tyr Lys Leu Ser Leu Glu
20 25 30
Ile Glu Gln Leu Glu Leu Gln Arg Asp Ser Ala Arg Gln Ser Thr Leu
35 40 45
Asp Lys Glu Leu
50

<210> 10
<211> 57
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Variant of the
C4bp core protein

<400> 10
Glu Thr Pro Glu Gly Cys Glu Gln Val Leu Thr Gly Lys Arg Leu Met
1 5 10 15
Gln Cys Leu Pro Asn Pro Glu Asp Val Lys Met Ala Leu Glu Val Tyr
20 25 30
Lys Leu Ser Leu Glu Ile Lys Gln Leu Glu Leu Gln Arg Asp Ser Ala
35 40 45
Arg Gln Ser Thr Leu Asp Lys Glu Leu
50 55

<210> 11
<211> 52
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Variant of the
C4bp core protein

<400> 11
Cys Glu Gln Val Leu Thr Gly Lys Arg Leu Met Gln Cys Leu Pro Asn
1 5 10 15

Pro Glu Asp Val Lys Met Ala Leu Glu Val Tyr Lys Leu Ser Leu Glu
20 25 30

Ile Lys Gln Leu Glu Leu Gln Arg Asp Ser Ala Arg Gln Ser Thr Leu
35 40 45

Asp Lys Glu Leu
50

<210> 12

<211> 57

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Description of Artificial Sequence: Variant of the C4bp core protein

<400> 12

Glu Thr Pro Glu Gly Cys Glu Gln Val Leu Thr Gly Lys Arg Leu Met
1 5 10 15

Gln Cys Leu Pro Asn Pro Glu Asp Val Lys Met Ala Leu Glu Ile Tyr
20 25 30

Lys Leu Ser Leu Glu Ile Glu Gln Leu Glu Leu Gln Arg Asp Ser Ala
35 40 45

Arg Gln Ser Thr Leu Asp Lys Glu Leu
50 55

<210> 13

<211> 57

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Variant of the C4bp core protein

<400> 13

Glu Thr Pro Glu Gly Cys Glu Gln Val Leu Thr Gly Lys Arg Leu Met
1 5 10 15

Gln Cys Leu Pro Asn Pro Glu Asp Val Lys Met Ala Leu Glu Ile Tyr
20 25 30

Lys Leu Ser Leu Glu Ile Lys Gln Leu Glu Leu Gln Arg Asp Ser Ala
35 40 45

Arg Gln Ser Thr Leu Asp Lys Glu Leu
50 55

<210> 14
<211> 50
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Variant of the
C4bp core protein

<400> 14
Glu Gly Cys Glu Gln Ala Leu Thr Gly Lys Arg Leu Met Gln Cys Leu
1 5 10 15
Pro Asn Pro Glu Asp Val Lys Met Ala Leu Glu Ile Tyr Lys Leu Ser
20 25 30
Leu Glu Ile Lys Gln Leu Glu Leu Gln Arg Asp Ser Ala Arg Gln Ser
35 40 45
Thr Leu
50

<210> 15
<211> 57
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Variant of the
C4bp core protein

<400> 15
Glu Thr Pro Glu Gly Ser Glu Gln Val Leu Thr Gly Lys Arg Leu Met
1 5 10 15
Gln Ser Leu Pro Asn Pro Glu Asp Val Lys Met Ala Leu Glu Val Tyr
20 25 30
Lys Leu Ser Leu Glu Ile Lys Gln Leu Glu Leu Gln Arg Asp Ser Ala
35 40 45
Arg Gln Ser Thr Leu Asp Lys Glu Leu
50 55

<210> 16
<211> 52
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Variant of the
C4bp core protein

<400> 16
Glu Gly Ser Glu Gln Ala Leu Thr Gly Lys Arg Leu Met Gln Ser Leu
1 5 10 15

Pro Asn Pro Glu Asp Val Lys Met Ala Leu Glu Ile Tyr Lys Leu Ser
 20 25 30

Leu Glu Ile Glu Gln Leu Glu Leu Gln Arg Asp Ser Ala Arg Gln Ser
 35 40 45

Thr Leu Asp Lys
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<210> 17

<211> 370

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Fusion Protein

<400> 17

Met Lys Phe Leu Pro Leu Phe Asp Arg Val Leu Val Glu Arg Ser Ala
 1 5 10 15

Gly Ser Val Asp Ala Glu Arg Leu Lys His Leu Ile Val Thr Pro Ser
 20 25 30

Gly Ser Gly Glu Gln Asn Met Ile Gly Met Thr Pro Thr Val Ile Ala
 35 40 45

Val His Tyr Leu Asp Glu Thr Glu Gln Trp Glu Lys Phe Gly Leu Glu
 50 55 60

Lys Arg Gln Gly Ala Leu Glu Leu Ile Lys Lys Gly Tyr Thr Gln Gln
 65 70 75 80

Leu Ala Phe Arg Gln Pro Ser Ser Ala Phe Ala Ala Phe Val Lys Arg
 85 90 95

Ala Pro Ser Thr Trp Leu Thr Ala Tyr Val Val Lys Val Phe Ser Leu
 100 105 110

Ala Val Asn Leu Ile Ala Ile Asp Ser Gln Val Leu Cys Gly Ala Val
 115 120 125

Lys Trp Leu Ile Leu Glu Lys Gln Lys Pro Asp Gly Val Phe Gln Glu
 130 135 140

Asp Ala Pro Val Ile His Gln Glu Met Ile Gly Gly Leu Arg Asn Asn
 145 150 155 160

Asn Glu Lys Asp Met Ala Leu Thr Ala Phe Val Leu Ile Ser Leu Gln
 165 170 175

Glu Ala Arg Asp Ile Cys Glu Glu Gln Val Asn Ser Leu Pro Gly Ser
 180 185 190

Ile Thr Lys Ala Gly Asp Phe Leu Glu Ala Asn Tyr Met Asn Leu Gln
 195 200 205

Arg Ser Tyr Thr Val Ala Ile Ala Gly Tyr Ala Leu Ala Gln Met Gly
210 215 220

Arg Leu Lys Gly Pro Leu Leu Asn Lys Phe Leu Thr Thr Ala Lys Asp
225 230 235 240

Lys Asn Arg Trp Glu Asp Pro Gly Lys Gln Leu Tyr Asn Val Glu Ala
245 250 255

Thr Ser Tyr Ala Leu Leu Ala Leu Leu Gln Leu Lys Asp Phe Asp Phe
260 265 270

Val Pro Pro Val Val Arg Trp Leu Asn Glu Gln Arg Tyr Tyr Gly Gly
275 280 285

Gly Tyr Gly Ser Thr Gln Ala Thr Phe Met Val Phe Gln Ala Leu Ala
290 295 300

Gln Tyr Gln Lys Asp Ala Pro Gly Ser Glu Thr Pro Glu Gly Cys Glu
305 310 315 320

Gln Val Leu Thr Gly Lys Arg Leu Met Gln Cys Leu Pro Asn Pro Glu
325 330 335

Asp Val Lys Met Ala Leu Glu Val Tyr Lys Leu Ser Leu Glu Ile Glu
340 345 350

Gln Leu Glu Leu Gln Arg Asp Ser Ala Arg Gln Ser Thr Leu Asp Lys
355 360 365

Glu Leu
370

<210> 18

<211> 387

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Fusion Protein

<400> 18

Met Lys Phe Leu Pro Leu Phe Asp Arg Val Leu Val Glu Arg Ser Ala
1 5 10 15

Gly Ser Val Asp Ala Glu Arg Leu Lys His Leu Ile Val Thr Pro Ser
20 25 30

Gly Ser Gly Glu Gln Asn Met Ile Gly Met Thr Pro Thr Val Ile Ala
35 40 45

Val His Tyr Leu Asp Glu Thr Glu Gln Trp Glu Lys Phe Gly Leu Glu
50 55 60

Lys Arg Gln Gly Ala Leu Glu Leu Ile Lys Lys Gly Tyr Thr Gln Gln
65 70 75 80

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Leu Ala Phe Arg Gln Pro Ser Ser Ala Phe Ala Ala Phe Val Lys Arg
 85 90 95

Ala Pro Ser Thr Trp Leu Thr Ala Tyr Val Val Lys Val Phe Ser Leu
 100 105 110

Ala Val Asn Leu Ile Ala Ile Asp Ser Gln Val Leu Cys Gly Ala Val
 115 120 125

Lys Trp Leu Ile Leu Glu Lys Gln Lys Pro Asp Gly Val Phe Gln Glu
 130 135 140

Asp Ala Pro Val Ile His Gln Glu Met Ile Gly Gly Leu Arg Asn Asn
 145 150 155 160

Asn Glu Lys Asp Met Ala Leu Thr Ala Phe Val Leu Ile Ser Leu Gln
 165 170 175

Glu Ala Lys Asp Ile Cys Glu Glu Gln Val Asn Ser Leu Pro Gly Ser
 180 185 190

Ile Thr Lys Ala Gly Asp Phe Leu Glu Ala Asn Tyr Met Asn Leu Gln
 195 200 205

Arg Ser Tyr Thr Val Ala Ile Ala Gly Tyr Ala Leu Ala Gln Met Gly
 210 215 220

Arg Leu Lys Gly Pro Leu Leu Asn Lys Phe Leu Thr Thr Ala Lys Asp
 225 230 235 240

Lys Asn Arg Trp Glu Asp Pro Gly Lys Gln Leu Tyr Asn Val Glu Ala
 245 250 255

Thr Ser Tyr Ala Leu Leu Ala Leu Leu Gln Leu Lys Asp Phe Asp Phe
 260 265 270

Val Pro Pro Val Val Arg Trp Leu Asn Glu Gln Arg Tyr Tyr Gly Gly
 275 280 285

Gly Tyr Gly Ser Thr Gln Ala Thr Phe Met Val Phe Gln Ala Leu Ala
 290 295 300

Gln Tyr Gln Lys Asp Ala Pro Gly Ser Gly Lys Val Leu Gln Ala Thr
 305 310 315 320

Val Val Ala Val Gly Ser Gly Ser Lys Gly Lys Gly Gly Glu Ile Gln
 325 330 335

Pro Val Ser Val Lys Val Gly Asp Lys Val Leu Leu Pro Glu Tyr Gly
 340 345 350

Gly Thr Lys Val Val Leu Asp Asp Lys Asp Tyr Phe Leu Phe Arg Asp
 355 360 365

Gly Asp Ile Leu Gly Lys Tyr Val Asp Glu Gln Lys Leu Ile Ser Glu
 370 375 380

Glu Asp Leu
 385

10/12

<210> 19
 <211> 388
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Fusion Protein

<400> 19
 Met Lys Phe Leu Pro Leu Phe Asp Arg Val Leu Val Glu Arg Ser Ala
 1 5 10 15
 Gly Glu Thr Val Thr Val Asp Ala Glu Arg Leu Lys His Leu Ile Val
 20 25 30
 Thr Pro Ser Gly Ser Gly Glu Gln Asn Met Ile Gly Met Thr Pro Thr
 35 40 45
 Val Ile Ala Val His Tyr Leu Asp Glu Thr Glu Gln Trp Glu Lys Phe
 50 55 60
 Gly Leu Glu Lys Arg Gln Gly Ala Leu Glu Leu Ile Lys Lys Gly Tyr
 65 70 75 80
 Thr Gln Gln Leu Ala Phe Arg Gln Pro Ser Ser Ala Phe Ala Ala Phe
 85 90 95
 Val Lys Arg Ala Pro Ser Thr Trp Leu Thr Ala Tyr Val Val Lys Val
 100 105 110
 Phe Ser Leu Ala Val Asn Leu Ile Ala Ile Asp Ser Gln Val Leu Cys
 115 120 125
 Gly Ala Val Lys Trp Leu Ile Leu Glu Lys Gln Lys Pro Asp Gly Val
 130 135 140
 Phe Gln Glu Asp Ala Pro Val Ile His Gln Glu Met Ile Gly Gly Leu
 145 150 155 160
 Arg Asn Asn Asn Glu Lys Asp Met Ala Leu Thr Ala Phe Val Leu Ile
 165 170 175
 Ser Leu Gln Glu Ala Lys Asp Ile Cys Glu Glu Gln Val Asn Ser Leu
 180 185 190
 Pro Gly Ser Ile Thr Lys Ala Gly Asp Phe Leu Glu Ala Asn Tyr Met
 195 200 205
 Asn Leu Gln Arg Ser Tyr Thr Val Ala Ile Ala Gly Tyr Ala Leu Ala
 210 215 220
 Gln Met Gly Arg Leu Lys Gly Pro Leu Leu Asn Lys Phe Leu Thr Thr
 225 230 235 240
 Ala Lys Asp Lys Asn Arg Trp Glu Asp Pro Gly Lys Gln Leu Tyr Asn
 245 250 255
 Val Glu Ala Thr Ser Tyr Ala Leu Leu Ala Leu Leu Gln Leu Lys Asp
 260 265 270

Phe Asp Phe Val Pro Pro Val Val Arg Trp Leu Asn Glu Gln Arg Tyr
 275 280 285
 Tyr Gly Gly Gly Tyr Gly Ser Thr Gln Ala Thr Phe Met Val Phe Gln
 290 295 300
 Ala Leu Ala Gln Tyr Gln Lys Asp Ala Pro Gly Lys Val Leu Gln Ala
 305 310 315 320
 Thr Val Val Ala Val Gly Ser Gly Ser Lys Gly Lys Gly Gly Glu Ile
 325 330 335
 Gln Pro Val Ser Val Lys Val Gly Asp Lys Val Leu Leu Pro Glu Tyr
 340 345 350
 Gly Gly Thr Lys Val Val Leu Asp Asp Lys Asp Tyr Phe Leu Phe Arg
 355 360 365
 Asp Gly Asp Ile Leu Gly Lys Tyr Val Asp Glu Gln Lys Leu Ile Ser
 370 375 380
 Glu Glu Asp Leu
 385

<210> 20

<211> 383

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Fusion Protein

<400> 20

Met Lys Phe Leu Pro Leu Phe Asp Arg Val Leu Val Glu Arg Ser Ala
 1 5 10 15

Gly Glu Thr Val Asp Ala Glu Arg Leu Lys His Leu Ile Val Thr Pro
 20 25 30

Ser Gly Ser Gly Glu Gln Asn Met Ile Gly Met Thr Pro Thr Val Ile
 35 40 45

Ala Val His Tyr Leu Asp Glu Thr Glu Gln Trp Glu Lys Phe Gly Leu
 50 55 60

Glu Lys Arg Gln Gly Ala Leu Glu Leu Ile Lys Lys Gly Tyr Thr Gln
 65 70 75 80

Gln Leu Ala Phe Arg Gln Pro Ser Ser Ala Phe Ala Ala Phe Val Lys
 85 90 95

Arg Ala Pro Ser Thr Trp Leu Thr Ala Tyr Val Val Lys Val Phe Ser
 100 105 110

Leu Ala Val Asn Leu Ile Ala Ile Asp Ser Gln Val Leu Cys Gly Ala
 115 120 125

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Val Lys Trp Leu Ile Leu Glu Lys Gln Lys Pro Asp Gly Val Phe Gln
 130 135 140
 Glu Asp Ala Pro Val Ile His Gln Glu Met Ile Gly Gly Leu Arg Asn
 145 150 155 160
 Asn Asn Glu Lys Asp Met Ala Leu Thr Ala Phe Val Leu Ile Ser Leu
 165 170 175
 Gln Glu Ala Lys Asp Ile Cys Glu Glu Gln Val Asn Ser Leu Pro Gly
 180 185 190
 Ser Ile Thr Lys Ala Gly Asp Phe Leu Glu Ala Asn Tyr Met Asn Leu
 195 200 205
 Gln Arg Ser Tyr Thr Val Ala Ile Ala Gly Tyr Ala Leu Ala Gln Met
 210 215 220
 Gly Arg Leu Lys Gly Pro Leu Leu Asn Lys Phe Leu Thr Thr Ala Lys
 225 230 235 240
 Asp Lys Asn Arg Trp Glu Asp Pro Gly Lys Gln Leu Tyr Asn Val Glu
 245 250 255
 Ala Thr Ser Tyr Ala Leu Leu Ala Leu Leu Gln Leu Lys Asp Phe Asp
 260 265 270
 Phe Val Pro Pro Val Val Arg Trp Leu Asn Glu Gln Arg Tyr Tyr Gly
 275 280 285
 Gly Gly Tyr Gly Ser Thr Gln Ala Thr Phe Met Val Phe Gln Ala Leu
 290 295 300
 Ala Gln Tyr Gln Lys Asp Ala Pro Leu Gln Ala Thr Val Val Ala Val
 305 310 315 320
 Gly Ser Gly Ser Lys Gly Lys Gly Gly Glu Ile Gln Pro Val Ser Val
 325 330 335
 Lys Val Gly Asp Lys Val Leu Leu Pro Glu Tyr Gly Gly Thr Lys Val
 340 345 350
 Val Leu Asp Asp Lys Asp Tyr Phe Leu Phe Arg Asp Gly Asp Ile Leu
 355 360 365
 Gly Lys Tyr Val Asp Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
 370 375 380

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